Claims 19-83 were pending prior to this instant amendment. By this amendment, claims 36 and 74 are amended. Accordingly, claims 19-83 are presently pending in the instant application.

At the outset the Examiner in thanked for his review of the patent application, for his indication that Applicants' terminal disclaimer filed on May 30, 2000 is accepted and recorded, and for indicating certain allowable subject matter in section 11 of the Office Action, though without specifically indicating the allowable subject matter pertaining to which particular claim. Applicants wish to note that no rejection under 35 U.S.C. § 102 or § 103 was made in the current Office Action.

The disclosure and claim 36 stand objected for informalities. Applicants have amended the specification and claim 36, as shown above, per the recommendations by the Examiner to overcome the objection.

The specification stands objected to under 37 C.F.R. 1.71 as allegedly failing to support the step of heating to form a non-(111) silicon layer as claimed in claims 29-36, and 66, and as allegedly failing to support claim 74 solving the problems with nickel oxide as the means to deliver nickel.

Claims 29, 36, and 66 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. Particularly, as asserted by the Office Action, it is not readily understood what is necessary to guarantee a non-(111) orientation by laser crystallization of amorphous silicon in contact with silicon nitride. In support of the assertion, the Office cites Fehlner et al. (U.S. Patent 4,915,772), which allegedly

allegedly discloses that the (111) orientation is not preferred, and that the laser crystallization in the art has resulted in inconsistent orientation. The objection and rejection are respectfully traversed.

To put the Office Action's citing of Fehlner et al. in proper context, Applicants respectfully note that Fehlner et al. further states, in column 6, lines 31-44, that (100) silicon is preferred over (111) silicon because the surface state density of (100) silicon is three times lower. However, the dislocation density is so high in laser crystallized silicon films that the factor of three in surface state density is obscured, and both orientations are equally useful for device fabrication. As can be seen, the citing of Felner et al. has little or no relevance and does not raise any doubts that Applicants' claimed step produce crystallized semiconductor film which does not have a (111) orientation.

Further, Applicants respectfully submit that the conditions for crystallization in the present invention are not the same as the conditions disclosed by Felhner et al. For example, Felhner et al. do not teach the use of a metal that promotes crystallization of a semiconductor film. Moreover, unlike Felhner et al., the semiconductor film in contact with the metal in the present invention does not touch silicon oxide, which helps promote the (111) orientation.

Applicants respectfully direct the Office to page 2, line 25 through page 3, line 8, page 4, lines 1-9, and page 25, lines 23 through page 26, line 6 for an exemplary disclosures of advantages and means for preventing a non-(111) silicon film, which are not disclosed or suggested by Felhner et al. As can be seen, Applicants' disclosed and claimed method achieves a crystallized semiconductor film that does not have a (111) orientation without the inconsistency that is noted by Felhner et al.

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In addition to the arguments set forth against the § 112, first paragraph, rejection, Applicants further respectfully submit that Felhner et al. teach crystallizing a semiconductor film only by heating with a laser and fail to disclose or suggest Applicants' step of crystallizing a semiconductor film by a light from a lamp after heating or irradiating, or crystallizing a semiconductor film with a laser beam after heating.

With respect to claim 74, Applicants have amended the claim to delete "nickel oxide."

Accordingly, at least for the reasons set forth above, the objection of specification under 37 C.F.R. 1.71 and the rejection of claims 29, 36, 66 and 74 under 35 U.S.C. §112, first paragraph, should be reconsidered and withdrawn.

Claims 19-83 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being incomplete for omitting essential steps. The Office Action asserts that the omitted step are: before crystallization, disposing the metal effective contact with the silicon nitride, and opening holes in the overlying oxide to place selective seeding in claim 72. The rejection is respectfully traversed.

Applicants respectfully submit that the step of disposing metal effective contact with the silicon nitride before crystallization is <u>not</u> required in the present invention, although it is required that the silicon nitride film is in contact with the semiconductor film as claimed in claims 78-83.

Cases have held that "if a claim adequately defines patentable subject matter and meets the disclosure and clarity standards of Section 112, then it is proper, even though it may encompass less than what the invention could claim." *Andrew Corp. v. Gabriel Electronics, Inc.* (Fed.Cir. 1988). Because disposing the metal effective contact with the silicon nitride is <u>not</u> required and is not a

critical feature of the present invention required to distinguish it over the prior art, such a limitation should not be required to be recited in the claims.

With respect to claim 72, Applicants respectfully submit that the silicon oxide film in claim 72 is an extremely thin film used for improving the wettability of the semiconductor film (see pages 11-12 of the present application). Therefore, it is not necessary to provide openings in the silicon oxide film.

Claims 24, 29, 36, 66, and 72 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being incomplete for omitting essential step of disposing a solution to deposit the metal that promotes crystallization. This rejection is respectfully traversed and requested to be reconsidered and withdrawn.

Applicants respectfully submit that the aforementioned step is not omitted in the claims, and the method to deposit the metal is not only disposing a solution but also sputtering of the metal, as disclosed in the second paragraph of page 8 in the present application. The Office is respectfully invited to review claim 24, 29, 36, 66, and 72, wherein the step of forming a layer comprising metal, disposing a solution comprising a metal compound, or disposing a metal is clearly recited.

Claims 19, 24, 29, 36, 66, and 72 stand rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite in that the independent claims provide the limitation that the silicon nitride is formed to contain at least one of hydrogen and oxygen but fail to distinguish the required concentration level from the inherent impurity concentration of the prior art. Claims 48, 51, 54, 57, 63, 69, and 75 stand rejected under § 112, second paragraph, as allegedly being unclear how the concentration recited therein differs from inherent concentration from CVD-

deposited silicon nitride of the prior art. These rejections are respectfully traversed.

Applicants respectfully submit that each of the § 112, second paragraph, rejections in paragraph 10 of the Office Action is improper for the reason that there is no basis in § 112, second paragraph, that a claimed invention must distinguish itself over a prior art.

If these rejections were intended to be a 35 U.S.C. § 103 rejection, then Applicants would respectfully direct the Office to the distinguishing features of the presently claimed invention that have been discussed above, namely, the step of producing a crystallized semiconductor substrate with non-(111) orientation, the steps of crystallizing a semiconductor film by annealing by a lamp after heating, or by irradiating a laser beam after heating a semiconductor film.

The Office cited Applicants' argument paper no. 31, starting at bottom of page 3 in support of the § 112, second paragraph, rejection. Applicants presume that the Office refers to the statement that it is well known that hydrogen is inherently contained in the silicon nitride film when silicon nitride is formed by using a CVD method, such as the method used in the present invention. With that presumption, Applicants respectfully submit that the cited prior art does not disclose a silicon nitride formed to contain at least one of hydrogen and oxygen, as neither does Applicants' above-cited statement.

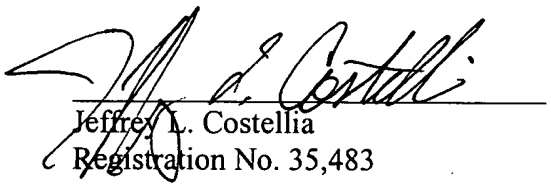
In view of the argument set forth above, the § 112, second paragraph, rejection of claims 19, 24, 29, 36, 66, and 72 and claims 48, 51, 54, 57, 63, 69, and 75 should be reconsidered and withdrawn.

CONCLUSION

Having responded to all objections and rejections set forth in the outstanding Office

Action, it is submitted that claims 19-83 are in condition for allowance. Notice to that effect is respectfully solicited. In the event that the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is courteously requested to contact applicant's undersigned representative.

Respectfully submitted,



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